

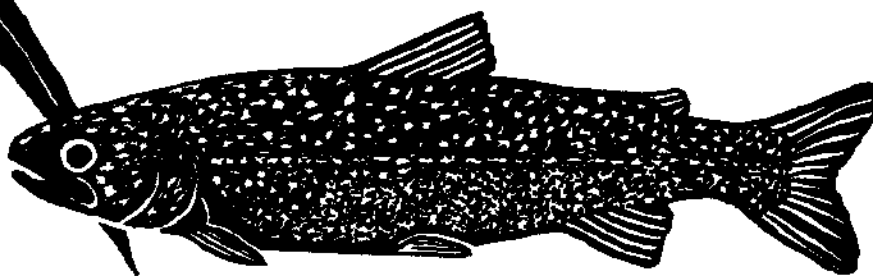
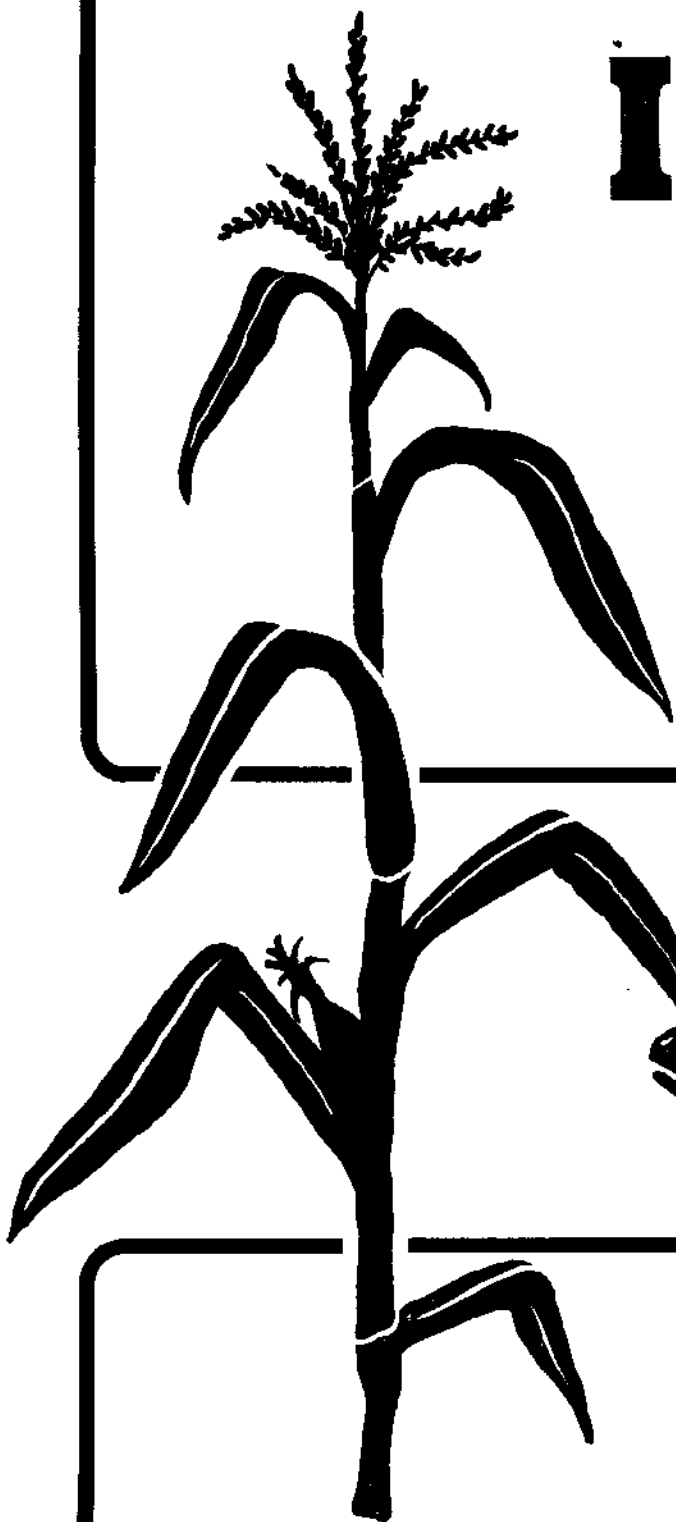
# **\*\*ATTENTION\*\***

*This document is provided for historical purposes only.*

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# Irrigation and Fish



**1985**

WATER USES THAT ARE COMPATIBLE THROUGH COOPERATION

# **FOREWORD**

This pamphlet has been prepared to help define and understand problems related to the limited water resource that is vital to both agriculture and fish production. It clarifies the state Hydraulic Code as it applies to irrigation water diversions, explains when Hydraulic Project Approvals (HPA) are needed and how to get them, and identifies when this pamphlet may serve as an HPA. An informational section is included that illustrates similarities in the production of farm products and fish.

We involved the public during development of this pamphlet through contact with farm-related organizations, and through news releases and public workshops inviting participation. Organizations and agencies contacted for input regarding this pamphlet included the Washington Cattlemen's Association, Washington State Grange, Washington State Farm Bureau, Washington State Dairymen's Federation, Washington State Water Resources Association, Washington Department of Ecology, Washington Department of Agriculture, Washington State Conservation Commission, U.S. Soil Conservation Service, U. S. Fish and Wildlife Service, and National Marine Fisheries Service. Public workshops were held in Seattle, Okanogan, Walla Walla, Spokane, Yakima and Ellensburg.

Copies of a draft were distributed to all interested groups or individuals, and responses were used in making corrections and revisions. Assistance given by many individuals and organizations has been very much appreciated.

The theme of this pamphlet is that for the most part **the use of water for irrigated agriculture and fish is compatible**, provided that the needs of both are recognized and protected, and proper conservation practices are observed.

HPAs only provide protection for fish life under the fisheries and game codes. Additional authorization from other agencies may also be necessary for your project. The Department of Ecology maintains a telephone hotline (206-459-6022) for information on permit requirements.

Funding for printing this pamphlet was provided by the Washington departments of Game, Fisheries, and Ecology.



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# HYDRAULIC PROJECT APPROVALS AND WATER RIGHTS

## Hydraulic Project Approvals (HPA)

The Department of Fisheries and the Department of Game have been given the responsibility to protect fish and fish habitat within Washington State. As one means of fulfilling this responsibility, these agencies administer the Hydraulic Code (RCW 75.20.100). This law requires that anyone desiring to "...use, divert, obstruct, or change the natural flow or bed of any river or stream..." shall obtain "...written approval of the department having jurisdiction of the site as to the adequacy of the means proposed for the

protection of fish life." The Hydraulic Code applies to work within the ordinary high water line of waters of the state. This approval is known as a Hydraulic Project Approval (HPA). It is free and normally quite easy to obtain.

In recognition of fish habitat needs and the potential for projects to cause adverse impacts, conditions may be placed upon work performed under an HPA to prevent or minimize damage. Protection of fish life is the only ground upon which an approval can be conditioned.

## Water Rights

Public waters of the state are allocated under the Water Code by the Department of Ecology. The role of Game and Fisheries relative to new water right requests is to make recommendations to Ecology concerning instream flow needs for fish. Ecology considers all comments received and makes the final determination as to whether a water right should be issued and if any conditions will be placed upon it. **The Hydraulic Code is not used, nor intended, to determine or regulate the quantity of water that can be taken under a water right. The Hydraulic Code ensures that the means used to obtain the water are not detrimental to fish resources.**



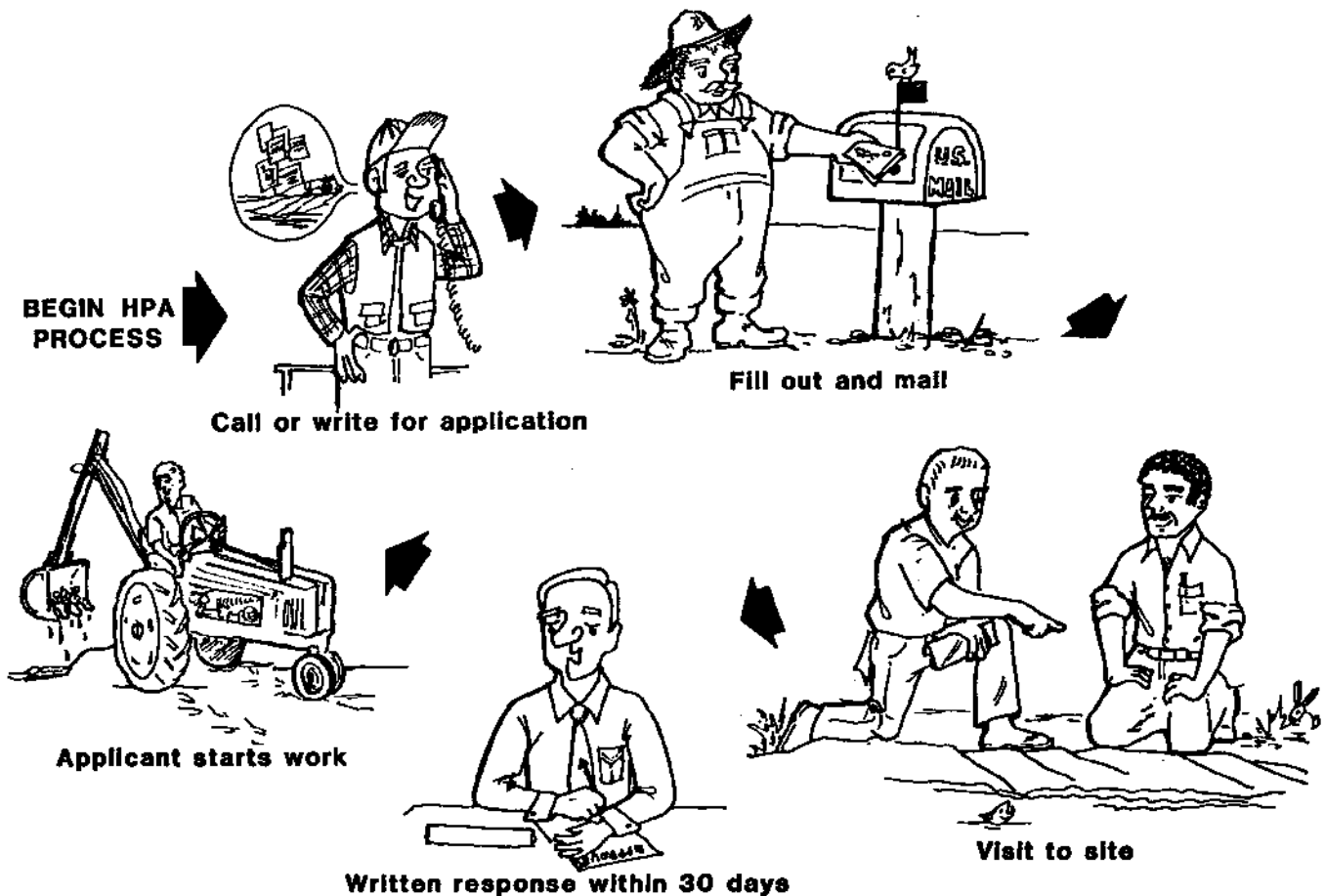
# How To Obtain A Hydraulic Project Approval

The Department of Game and Department of Fisheries maintain offices at several locations to better serve the public. Addresses and phone numbers are listed on the inside of the back cover. Hydraulic project applications can be obtained in person or by phoning or writing any of these offices. An application is included as the last page of this pamphlet. Staff members are available to assist in any way they can, including answering questions about applications.

Application procedures are intended to be responsive to the applicant. For example:

- 1) Only one agency will respond to an application in order to speed response time, even though the law is jointly administered.
- 2) Complete plans are necessary only for that portion of the project that affects fish life.
- 3) By law, maximum processing time is 45 days, but the policy of both agencies is to respond in 30 days or less whenever possible.
- 4) HPAs can be written for up to five years.
- 5) **During emergencies caused by flood conditions, verbal HPAs can be obtained to perform emergency work.** A 24-hour telephone hotline (206-753-6618) is available for you to call in case of emergencies involving high water.

## HPA Process





## Classification of Work Activities

One goal of this pamphlet is to clearly identify activities that require an HPA and to provide an alternative procedure for projects that are less likely to cause damage to fish resources. Many activities are required for an irrigation diversion to function properly and efficiently, and many of these take place within the ordinary high water line jurisdiction of the Hydraulic Code. Some are unlikely to cause serious habitat damage, particularly if the water user understands the needs of fish and uses care in completing the job.

The potential for damage to fish habitat is greatest where equipment is used within lakes or streams. **Equipment**, as defined in the Glossary, was therefore chosen as the criterion for classifying activities that require a formal HPA.

### No HPA Required

Work in irrigation ditches and canals, as long as the ditches and canals were not originally watercourses, does not require an HPA. Regulation of water flow from a permanent irrigation structure by operating valves or manipulating stop logs, check boards, or head boards does not require an HPA. But, please use caution because sudden flow changes, either increasing or decreasing, can cause property and structural damage and impact fish life.

### Formal HPA Not Required

Cleaning, adjusting, operating, and maintaining existing irrigation diversion structures by **hand** or **hand-held tools** may be accomplished without securing a formal HPA. The following are examples of the types of projects for which **this pamphlet can serve as the HPA**, as long as the projects are conducted by hand or with hand-held tools:

- 1) Installation and removal of pumps
- 2) Installation and removal of suction hoses and intakes (Please note the special concerns and needs for screening, as discussed in a following section of this pamphlet.)

- 3) Operation and maintenance of existing diversions
- 4) Cleaning of screens
- 5) Physical removal of vegetation
- 6) Installation and removal of temporary irrigation diversions
- 7) Removal of sediment



If there is a question as to whether or not an activity could damage fish life, contact the nearest Game or Fisheries office for assistance.

### Formal HPA Required

Formal Hydraulic Project Approvals are required for projects when **equipment is used within a watercourse**. The approval may be for a one-time/one-season activity, or it may be valid for recurring types of activities for periods up to five years.

**Long-term approvals.** These would typically be written for recurring activities where the location, work procedures, and physical and biological conditions remain consistent from year to year. Although projects are considered on a case-by-case basis, long term projects might include the following:

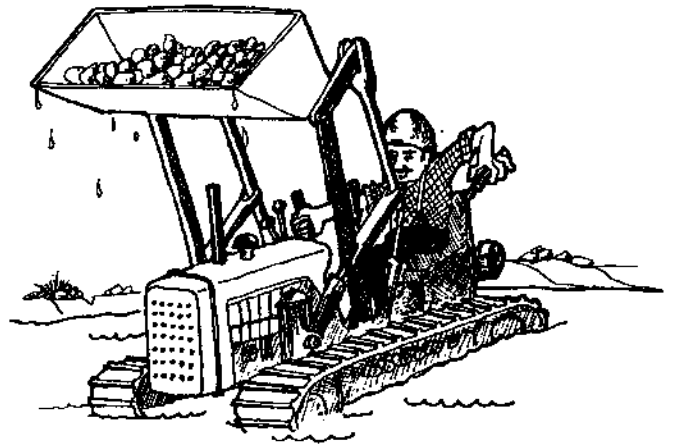
- 1) Seasonal installation and removal of diversion structures, including berms, wing dams, etc.
- 2) Seasonal maintenance of diversion structures and pump stations
- 3) Removal of sediment
- 4) Removal of aquatic vegetation
- 5) Installation and removal of pumps
- 6) Recurrent maintenance work on dikes, levees, and jetties



Long-term HPAs will usually include site-specific provisions to prevent or minimize fish and fish habitat loss. These provisions will normally have been thoroughly discussed on site by the applicant and the agency representative.

**Short-term approvals.** Short-term approvals would be valid for the project life during one year and would apply to major projects and non-recurring activities, such as:

- 1) New or replacement construction, including:
  - a) pumping stations
  - b) dikes, levees, or jetties
  - c) excavation or dredging
  - d) permanent diversion structures
- 2) Stream channelizations
- 3) Channel changes and/or realignments
- 4) Bank protection and erosion control
- 5) Streambed disturbance by equipment



Provisions for fish protection will depend upon the location and type of project and use of the area by fish. If work is not completed by the applicant during the specified term, an extension or renewal may be given for a time period which is not detrimental to the fish resources.

# FARM PRODUCTION AND FISH: IMPORTANT RENEWABLE RESOURCES

Fish production in Washington has a common bond with farm production. Both are renewable resources that have very similar basic requirements for sustained production.

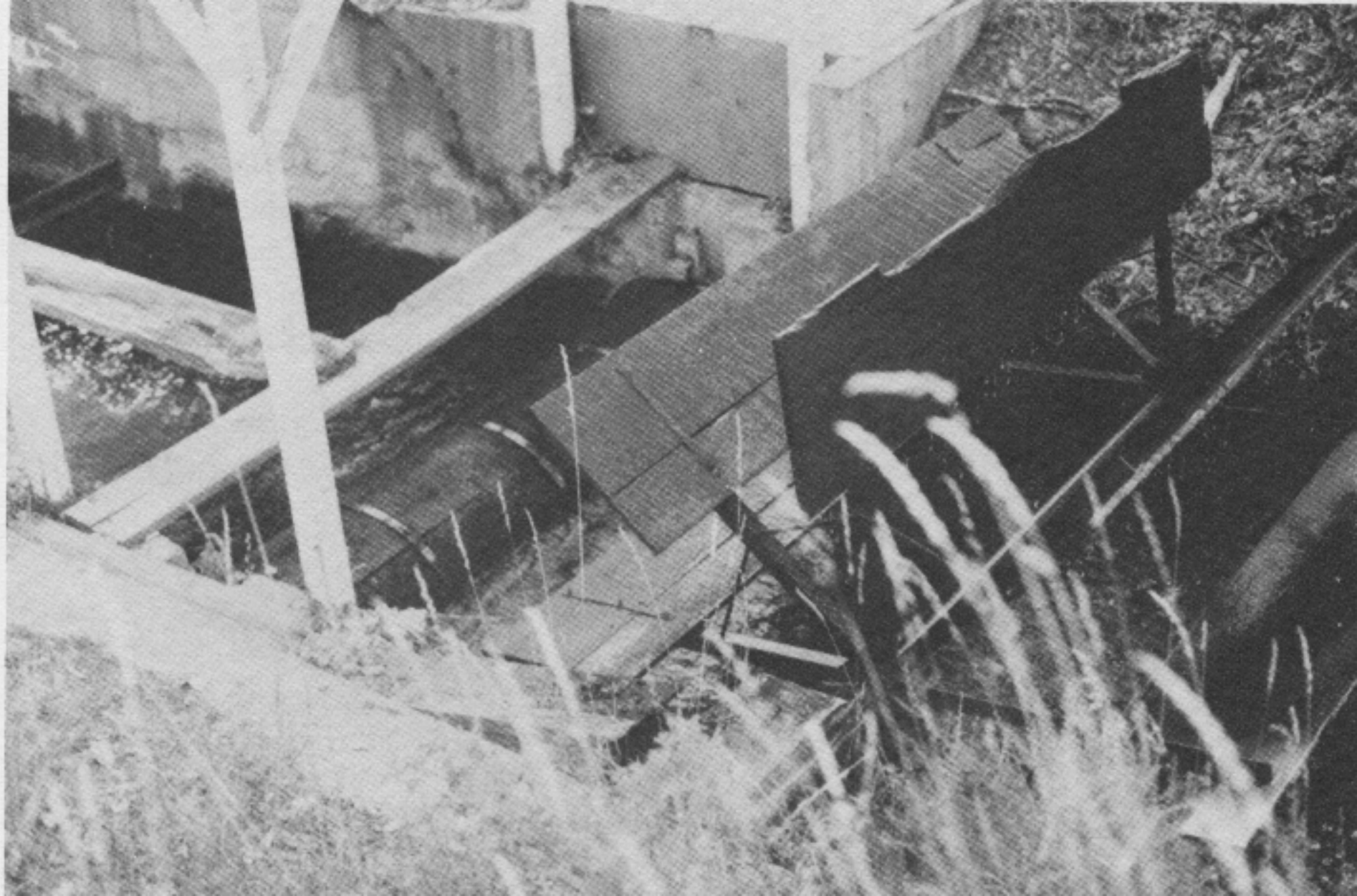


Production of either is possible only when all life requirements are met. Successful management demands careful conservation practices to sustain or improve production.

## Historical Trends

During this century there has been a steady increase in demand for food production in the United States and the world. Agriculture in Washington has responded with remarkable production increases. Improved technology has been important, but irrigation helps account for Washington leading the nation in production of several crops.

There have been corresponding increases in the demand for fish during this same period,



both for food and recreation. Unfortunately, production of fish has been unable to respond and has decreased in many areas as the population of the state has increased. Causes of fish production declines are many, and they have been occurring over many years. They include hydroelectric dams, poor logging and farming practices, industrial pollution, urban development, and others. Most often the decreases may be traced to lost or damaged habitat.

## Fish Habitat Requirements

Habitat is the combination of food, water, and space that enables plants or animals to survive. They flourish when these things are in ample supply, but perish when critical needs or basic elements are not met. While a plant crop requires proper soil fertility, air temperature, and water, fish are equally dependent upon water quantity and quality, food availability, instream cover, streambed and shoreline stability, and streambank vegetation.



Important elements of water quality include temperature, dissolved oxygen content, and sediment. Trout and salmon require cool, clean water rich in dissolved oxygen. Spinyrays (bass, perch, crappie, sunfish, etc.) do well in lakes with higher temperatures. Sediment, or dirt particles, in the water causes a decrease in light penetration, a decrease in food production and reduced survival. When stream beds and banks remain stable, sediment is less of a problem. Streambank vegetation is important to

maintain stream stability. It also provides overhanging cover for fish and helps maintain cooler water temperatures by providing shade.

The habitat must include nursery areas where fish can spawn, eggs can incubate, and young fish can grow. It is during these periods that fish are most susceptible and need the most protection.

The availability and conservation of habitat is critical for both agriculture and fish. But the farmer has an advantage: He owns or leases the land and can individually practice conservation. This is not the case with fish habitat—conservation is always dependent upon the actions and cooperation of many. Game and Fisheries seek your help.

## Irrigation and Fish Conservation

Irrigation projects have had both positive and negative impacts on fish, as well as wildlife. Many reservoirs and wasteways support valuable populations of resident fish. The Potholes Reservoir is a prime example where extensive habitat has been created for many species.

There are conservation opportunities that are beneficial to both resources. For example:

- 1) Irrigation practices that reduce accelerated soil erosion and prevent losses of valuable topsoil also reduce the amount of sediment in return flows that adversely impact water quality.
- 2) Streambank stability should be maintained to prevent bank erosion and loss of land, and to reduce the entry of sediment into the stream.
- 3) To the extent possible, use only that amount of water that is needed.
- 4) Work within streams should usually be done during summer periods of low flow. Low flows are desirable for construction work, and this timing is less disruptive to fish habitat.
- 5) Work should be anticipated in advance, as much as possible, to allow scheduling to minimize impact.

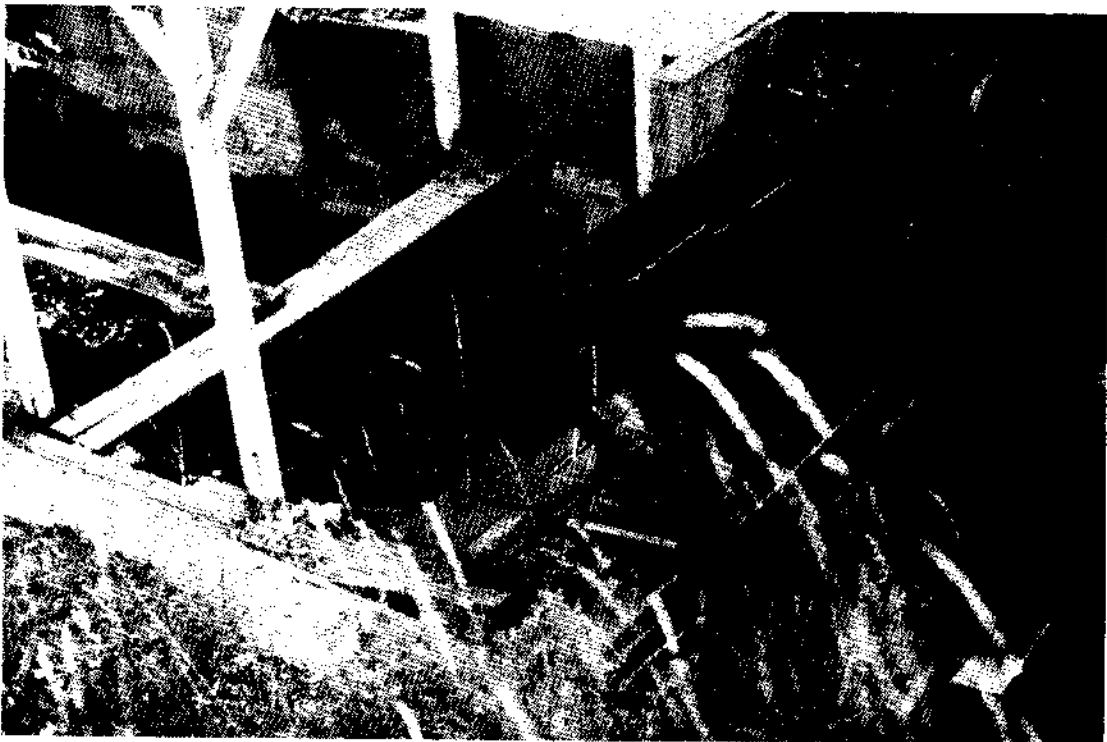
Most important is the understanding that, with cooperation and conservation, **irrigation and fish production can be compatible.**

# SCREENING OF DIVERSIONS: A SPECIAL CONCERN

Screening laws are part of the Game and Fisheries codes, but are separate from the Hydraulic Code that is the subject of this pamphlet. However, proper screening of diversions is so important to survival of fish in irrigation areas that it warrants mentioning.

Juvenile fish live along shoreline areas of shallow water that affords them protection from larger fish. The near-shore areas also provide their food source. Therefore, juveniles are the most prone to enter diversions. When a berm or other device is used to deflect water into an irrigation canal, many fish encountering the berm will enter the diversion. If the diversion is not properly screened and provided with a suitable bypass channel back to the parent stream, losses will occur.

Game and Fisheries need everyone's cooperation to improve screening protection. Please contact our offices for screening information on specific projects.



# GLOSSARY

- 1) "Emergency" means an immediate threat to life, public or private property, or an immediate threat of serious environmental degradation, arising from weather or stream flow conditions or other natural conditions.
- 2) "Equipment" means any device powered by internal combustion, hydraulics, electricity, or livestock used as draft animals and the lines, cables, arms, or extensions associated with the device.
- 3) "Fish life" means all fish species including, but not limited to, food fish, shellfish, and game fish.
- 4) "Hydraulic project" means construction or other work that will use, divert, obstruct, or change the natural flow or bed of any river or stream, or that will utilize any of the salt or fresh waters of the state, or materials from the stream beds.
- 5) "Hydraulic project application" means a form provided by and submitted to the Department of Game or Department of Fisheries accompanied by plans and specifications of the hydraulic project.
- 6) "Hydraulic project approval" (HPA) means a written approval signed by the Director of Fisheries or the Director of Game, or employees designated and authorized to do so.
- 7) "Ordinary high water line" means the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation.
- 8) "River or stream" means waters in which fish may spawn, reside, or through which they may pass. This includes watercourses which exist on an intermittent basis or which fluctuate in level during the year and applies to the entire bed of such watercourse whether or not the water is at peak level. This also includes any natural watercourses which have been altered by man. This definition is not meant to include irrigation ditches, canals, storm water run-off devices, or other entirely artificial watercourses, except where they exist in a natural watercourse which has been altered by man.
- 9) "Watercourse" means any portion of a channel, bed, bank, or bottom within the ordinary high water line of waters of the state. This definition is not meant to include irrigation ditches, canals, storm water run-off devices, or other entirely artificial watercourses, except where they exist in a natural watercourse which has been altered by man.



DEPARTMENT OF GAME

600 Capitol Way North  
Olympia, Washington 98504  
(206) 753-5897

# HYDRAULIC PROJECT APPLICATION

(R.C.W. 75.20.100)

PLEASE PRINT OR TYPE

**DO NOT WRITE IN SHADED AREA**



DEPARTMENT OF FISHERIES

General Admin. Bldg.  
Olympia, Washington 98504  
(206) 753-6650

10 LAST NAME		FIRST		18 CONTACT PHONE(S)	
19 STREET OR RURAL ROUTE					
CITY		STATE		ZIP	
12 WATER		TRIBUTARY TO			
13 QUARTER SECTION		SECTION	TOWNSHIP	RANGE (E-W)	COUNTY
					11 TYPE OF PROJECT

## DESCRIPTION OF WORK, METHOD, AND EQUIPMENT

PROPOSED STARTING DATE

PROPOSED FINISHING DATE

20 SEPA AGENCY/DATE OF DETERMINATION

21 OTHER PERMITS

IT IS UNDERSTOOD THAT NO WORK WILL  
BE STARTED UNTIL A SIGNED APPROVAL  
IS RECEIVED

SIGNATURE

DATE

### TIME LIMITATIONS:

## INSTRUCTIONS FOR COMPLETING HYDRAULIC PROJECT APPLICATION FORM

The Hydraulic Code (RCW 75.20.100) provides that in the event any person or government agency desires to construct any form of hydraulic project or other work that will use, divert, obstruct, or change the natural flow or bed of state waters or that will utilize any of the salt or fresh waters of the state or materials from the beds, must submit plans for the proposal to either the Department of Fisheries or the Department of Game. These plans shall contain the general plans for this overall project and complete plans and specifications for work within the ordinary high water line. **Written approval must be secured from the Department having jurisdiction over the site before commencing construction or work.**

For projects located in the following areas an application shall be submitted to the Department of Fisheries:

Western Washington, which includes all lands lying west of the summit of the Cascade Mountains.

All mainstream Snake River projects and all mainstream Columbia River projects downstream of Chief Joseph Dam.

For projects located in the following areas an application shall be submitted to the Department of Game:

Eastern Washington, which includes all lands lying east of the summit of the Cascade Mountains including Klickitat County, except as noted above.

The application shall be mailed to the address of the appropriate agency.

Department of Fisheries  
115 General Administration Building  
Olympia, Washington 98504  
(206) 753-6650

Department of Game  
600 North Capitol Way  
Olympia, Washington 98504  
(206) 753-5897

The application shall include a vicinity plan and site plan of the project (cross-sections and profile shall be included when necessary). These should be attached. The reverse side of the form may be used as needed. An incomplete application may delay issuance of the approval.

**BLOCK 11.** Enter only that portion of the project within the ordinary high water line, i.e., Culvert Installation, Bank Protection, etc.

**BLOCK 12.** Identify water by legal or common name (if unknown, enter unknown) and first named receiving water. (i.e., Jones Creek, tributary Skagit River.)

**BLOCK 13.** Enter legal description (section, township, range). If unknown, check with county auditor's office.

**BLOCK 20.** The State Environmental Policy Act (SEPA) RCW 43.21c requires a determination of the environmental impact as identified in a completed environmental checklist and other information. If you have previously completed an environmental checklist for a local, county, or state agency for this project and a significant/non-significant declaration has been made, attach a copy or specify the agency and date of determination. **By law, the hydraulic approval cannot be issued prior to completion of the SEPA process.**

**BLOCK 21.** List other permits required. Identify by title and identification number. Examples are:

Corps of Engineers (Federal)  
Forest Practices (Department of Natural Resources)

Water Rights; Flood Zone (Department of Ecology)  
Shorelines, Building, Conditional Use (County or City)

The completed forms should be submitted as far in advance as possible. Up to 45 days should be allowed for investigation and processing of the application. If you require information concerning your application, you should write or phone the appropriate department.



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115 General Administration Building  
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600 North Capitol Way  
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## **DEPARTMENT OF GAME REGIONAL OFFICES**

**Olympia Headquarters Office**  
600 North Capitol Way  
Olympia, WA 98504  
Phone 753-5700

**Spokane Regional Office**  
N. 8702 Division Street  
Spokane, WA 99218  
Phone 456-4082

**Ephrata Regional Office**  
1540 Alder Street N.W.  
Ephrata, WA 98823  
Phone 754-4624

**Yakima Regional Office**  
2802 Fruitvale Boulevard  
Yakima, WA 98902  
Phone 575-2740

**Seattle Regional Office**  
16018 Mill Creek Boulevard  
Mill Creek, WA 98012  
Phone 775-1311

**Vancouver Regional Office**  
5405 N.E. Hazel Dell  
Vancouver, WA 98663  
Phone 696-6211

**Aberdeen Regional Office**  
905 East Heron  
Aberdeen, WA 98520  
Phone 533-9335

## **DEPARTMENT OF FISHERIES REGIONAL OFFICES**

**Olympia Headquarters Office**  
3939A Cleveland Avenue  
Tumwater, WA 98504

**Lower Columbia Regional Office**  
P.O. Box 999  
Battleground, WA 98604  
Phone 696-6261

**Eastern Washington Regional Office**  
P.O. Box 9155  
Yakima, WA 98909  
Phone 575-2743

**Northern Puget Sound Regional Office**  
333 East Blackburn Road  
Mt. Vernon, WA 98273  
Phone 336-9538

**Coastal Regional Office**  
331 State Highway 12  
Montesano, WA 98563  
Phone 249-4628

**North Coastal Regional Office**  
Route 1, Box 1375  
Forks, WA 98331  
Phone 374-9506

**Lake Stevens Regional Office**  
Department of Fisheries  
c/o U.S.D.A.  
Frontier Village  
Lake Stevens, WA 98258  
Phone 259-5749